

Urban Consumers' Attitudes Towards Non-wood Forest Products and Services in Switzerland and an Assessment of Their Market Potential

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Abstract To obtain empirical data on future market potential, a consumer survey about supply, demand and consumption of non-wood forest products and services (NWFP&S) was conducted in six cities in different cantons of Switzerland. A total of 897 persons—about 150 per city—were interviewed through arbitrary selection in which women and youths were overrepresented in comparison to the Swiss population. A high consumer acceptance of forest products and particularly forest services among the Swiss urban population was observed. Preferences in purchasing honey, berries, mushrooms and roots among other NWFP were reported. The quality of the products and their environmental friendliness ranked highest in the attitudes of potential consumers who prefer to buy NWFP at market stands, in retail traders' shops and in drugstores. The most popular forest activities among the respondents are recreation and various kinds of sports activities followed by the gathering of NWFP. As far as the consumers' wishes and aspirations are concerned, sports, camping and adventure rank high apart from the desire to acquire environmental knowledge about the forest flora and fauna. NWFP&S are highly estimated in Switzerland and have a considerable market potential and, if well marketed, could add substantially to the income of forest enterprises.

Keywords Multiple-use forest management · Perception of forest benefits · Forest product marketing · Quality criteria of NWFP

Introduction

Recent years have witnessed a paradigm shift in forestry and forest management due to worldwide economic, ecological and social changes. Nowadays, forests have to

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fulfil several functions linked to these three dimensions of sustainability. Contemporary multidimensional forest management is focused on alternative uses beyond wood products. This development has led to a much broader concept of non-wood products and services, including landscape amenity, clean air, water storage, biodiversity, providing a space for recreation and tranquillity (e.g., Chamberlain et al. 1998; Langner 1998; Köchli 2006). Three value-oriented criteria can be used to assess their social and economic relevance, namely high value, surplus value and existence value. High-value products include particular varieties of mushrooms, berries, nuts and pine kernels, and forest honey. Surplus value is attributed to services by nature-oriented and 'green' advocates, such as forest burials (a 'stylish product' that has come into fashion over the past decade in some European countries, where the ashes of a cremated person are buried under a tree species that was chosen prior to the person's death) and environmental education in forests. Another surplus value is that forests are important as a carbon sink, and are critical for biodiversity, naturalness, recreation and well-being (cf. Sills and Lee Abt 2003). The existence value of forests lies in their historical properties, being a part of the landscape and the natural and cultural heritage of a region. Further research can develop indicators for these criteria to allow for cross-cultural comparison among the forest sectors across Europe (Seeland and Staniszewski 2005), as has already been done by Janse and Ottitsch (2005) for Norway and The Netherlands.

The market value of these products and services varies substantially among northern, eastern and western European countries, as examples from France, the Czech Republic, Finland, Lithuania, Denmark, Sweden, Norway, Russia and the Baltic States show (Republique Française 1994; Olmos 1999; Saastamoinen 1999). Wage levels, domestic demand, and consumption as well as export opportunities determine forests' economic role and contribution to rural development. Apart from the cultural significance of NWFP&S as a traditional part of rural and self-sustaining economies, these economic properties may be used as criteria for assessing their economic importance for forest sector enterprises serving city dwellers who favour locally gathered or grown products instead of imports (Gram 2001). Furthermore, job growth in the forestry sector and related sectors of a country's economy is an important criterion of relevance. Employment in the tourism sector, in nature education (e.g., wildlife watching), biosphere reserve management, the souvenir industry and the marketing of new products and services can emerge from these activities.

Forest products and services other than timber production have to be seen in the light of their policy relevance (Saastamoinen 1999) and function in the ecosystem in general (de Groot et al. 2002). Forests in the form of actively growing plantations have become increasingly important for carbon sequestration, as investments for banks and private investors, as attractions in ecotourism programs to show tourists what sustainable forest management means, and for adding market value to real estate in nearby urban metropolises.

The objective of this contribution is to detect trends in the urban consumer's perception of Swiss forest products in selected areas of French- and German-speaking cantons. What products and services from Swiss forests are known to urban dwellers, and who buys and consumes them? In particular, issues addressed

included knowledge of NWFP&S, willingness and main criteria for purchasing them. The goal of this survey was to gain a sense of market penetration by NWFP&S and to assess the potential for their promotion to likely consumers.

Research Methods

A survey was conducted to investigate the current consumption and use, as well as the demand potential, of non-wood forest products and services in six cities in six different cantons of Switzerland—Neuenburg, Luzern, St. Gallen, Lausanne (Canton of Vaud), Schwyz and Bern. A questionnaire was developed and used for personal interviews of passers-by in urban shopping areas, on weekdays in July and August 2005. Data confidentiality was assured to the participants to encourage forthright responses. The questionnaire comprised close-ended as well as open-ended questions about supply, demand and consumption of NWFP&S. Interviewers were instructed to select interviewees irrespective of gender and age; however, children, i.e., persons below the age of fifteen years, were not included in the sample. Pre-testing revealed that children have little or widely varying understanding of what the questions concerning NWFP were all about.

The following results refer to questions about supply, demand and consumption of NWFP&S. The statistical analysis was done with the help of SPSS (Superior Performance Software System) as well as Excel and, depending on the kind of question asked, includes *t*-tests, correlations, analyses of variance and χ^2 tests.

Survey Findings

Characteristics of the Sample

A total of 897 persons—about 150 per city—were interviewed. The sample contained 56% female respondents, significantly higher than the average for the Swiss population (χ^2 -test, $p \leq 0.001$) of which about 51% are women (BFS 2006). About 38% of participants were aged 15 to 29 years, 22% were 30 to 44 years, 22% were 45 to 59 years, 14% were 60 to 74 years, and 3% were older than 74 years. Compared with the age distribution of the Swiss population, the sample had a higher proportion of young persons (15–29 years), and those over 60 years were underrepresented (χ^2 -test, $df = 4$, $p < 0.001$). The age and gender distribution of the sample showed that women and young persons were particularly overrepresented in the shopping areas of the cities where the survey was conducted.

About 83% of interviewees ranked their personal income according to the predefined categories. Income up to 3000 CHF¹ per month was reported by 42% of the respondents, 3001–6000 CHF by 37%, 6001–9000 CHF by 16%, and more than 9000 CHF by 6%.

¹ 1 CHF (Swiss franc) is equivalent to about 1.65 € or US\$1.22 (2007)

Findings Concerning Forest Products and Services

Asked what products and services from Swiss forests are known to them, 590 respondents (66%; $n = 897$) mentioned a variety, mostly products such as honey, mushrooms, berries, herbs, greenery and wild fruits. An interesting finding is that the frequency of forest visits correlates positively with purchasing and consuming NWFP (bi-serial rank correlation, $r = 0.08$, $p < .05$). The gender comparison of the purchase behaviour shows that women (buyer rate 62%) buy forest products significantly more frequently than men (buyer rate of 49.9%), Chi-Square Test, $df = 1$, $p < .001$). The interviewees between 45–59 years represent a very important group of buyers of NWFP, since nearly 70% of them stated that they had recently bought these products. In contrast, the rate of buyers in the youngest age group (15–29 years) is 47% and in the oldest age group (over 74 years) 46%. The relationship between age group and purchase behaviour was statistically significant (χ^2 -test, $df = 4$, $p < 0.001$). There is a continuous increase of NWFP consumption with rising income. In the highest income category (more than 9000 CHF equivalent to c. 5500 € per month) the buyer rate amounts to almost 80% of the respondents. The bi-serial rank correlation between income category and purchase behaviour is highly significant ($r = 0.14$, $p < 0.001$).

The rate of actual buyers of NWFP is 56% ($n = 868$). For example, only 37% of the buyers of NWFP reported to have recently bought pharmaceuticals and medical herbs and ointments from forests, whereas the consumer potential—with 58% positive responses—is considerably higher. The ranking order of the different products shows that forest honey was bought most frequently by 55% ($n = 486$) of the buyers. A comparison of different age groups shows that there is only a modest rate of buyers between 15- and 30-years old. For this age group both the price and an appealing packaging are more important than for older respondents. In order to address this age group more effectively, an attractive price and product design strategy by forest enterprises or retail sellers could probably lead to higher sales of NWFP to this young section of society.

The buyer rate among persons who do not visit forests themselves is 44%. Amongst the persons who visit the forest less than once a month, the buyer rate is 52% and 60% amongst those who visit forests once a week or more often. It has to be stated that the buyers were presumed to be the users of NWFP irrespective if they might have purchased the products for others, as the survey focused on the market (sales) potential.

In the following paragraphs the answers to selected questions from the questionnaire are analysed. The selection was guided by considerations to provide empirical data about the future marketing prospects of NWFP&S in an urbanized society in Switzerland, as more than 70% of its population lives in cities. This survey can, therefore, be taken as a contribution to rural – urban interaction research.

Which of the following Swiss forest products would you buy?

This question was meant to reflect the actual market potential of various non-wood forest products. The rate of actual buyers was 56%. The participants were asked to select from 12 categories of products; multiple choices were possible. Altogether, 98% of the respondents selected at least one kind of product. As indicated in Table 1, responses reveal that the food group had the greatest support: forest honey has the most promising sales potential, followed by berries, mushrooms and roots, then chestnut products. Forest honey in Switzerland actually generates a conversion of approximately 10 million Swiss Francs (c. 6 M €) per year (BUWAL and WSL 2005). The second most important product comprises pharmaceuticals and alternative medicines, including teas, ointments and herbs as well as products for wellness and health in general, e.g., essential oils and body care products such as lotions and balms. There is a comparatively small demand for animal products and game in our survey. The least customer interest is in decorative articles (e.g., evergreens, moss), seeds, greenery or leaves and twigs.

Which aspects would you pay special attention to when purchasing forest products? How important are the following aspects to you?

The objective of this question was to determine what certain groups of customers would be expecting if their attention should be drawn to a particular forest product and they then buy it. The participants evaluated eight selected aspects relevant to a decision to purchase a product on a scale from 1 (=unimportant) through to 7 (=very important). Table 2 reports the average values of the evaluations. Quality (average 6.3) is the characteristic most highly rated by the Swiss urban population, followed closely by 'environmental friendliness' (6.1), followed by certification, price, place

Table 1 Percentage of potential buyers of NWFP ($n = 897$)

Product	Frequency of mentions, %
Forest honey	80
Berries, mushrooms, roots	70
Chestnut products	63
Pharmaceuticals	58
Essential oils	43
Body care products	43
Animal products, game	34
Decorations	33
Seeds	23
Branches, twigs	20
Leaf litter, greenery, brushwood	16
Other	1

of origin and whether these products are an alternative to mass-produced items, with average ratings of 4.6 to 5.0 (i.e., ‘rather important’). The preference for an attractive packaging declines significantly with increasing age (rank correlation, $r = -0.230$, $p < 0.001$). The price is more important to those younger than 45 years than to older respondents, whereas Swiss products or products from their region are more important to the latter group ($r = 0.191$, $p < 0.001$). Certification of NWFP is somewhat more important to persons younger than 60 years than for those above this age group (one-way ANOVA, $p < 0.05$). Product quality as the most frequently mentioned and thus the most important aspect of NWFP and environmental friendliness, is equally important to all age groups. Thus it seems that many interviewees prefer certified, high-quality forest products of regional origin. In contrast, aspects like uniqueness and attractive packaging have rather low ratings. However, it is possible that, particularly for packaging, the interviewees wished to give the impression that their choice would be guided by rational causes. Such a tendency to give rational or socially desired answers can be seen, for example, if the quality of products is said to be more important than packaging. There are significant gender differences regarding the expectations of these forest products. Women gave a higher importance to most of the product characteristics. An exception is ‘uniqueness’, which was rated slightly, but not significantly, higher by men. ‘Environmental friendliness’ ($p < 0.001$) and ‘quality’ ($p < .05$) are rated significantly higher by women than by men. ‘Regional origin’ ($p < 0.05$) and ‘certification of products’ ($p < 0.01$) are also significantly more important to women.

Who should sell Swiss forest products?

The purpose of this question was to get the respondents’ assessment of their most preferred market channels for NWFP. As indicated in Table 3, respondents favoured shopping places such as market stands and retail stores; the Internet and discounters were regarded as unsuitable places to buy non-wood forest products. The respondents may associate important aspects of forest products—such as quality

Table 2 Average ratings of aspects of NWFP ($n = 877$ to 888 , depending on characteristics)

Aspect	Average rating (from scale 1 to 7)
Product quality	6.3
Environmental friendly properties	6.1
Green certificate	5.0
Price	4.9
Being alternative products	4.7
Being of regional origin	4.6
Uniqueness	3.8
Attractive packaging	2.9

Table 3 Percentage of actual non-buyers and buyers of NWFP according to selling locations ($n = 897$)

Selling points	Non-buyer	Buyer	Total
% of the respondents			
Market stand*	63	71	67
Retail traders	61	68	65
Drugstore*	43	50	47
Department store	39	42	41
Heimatwerk **	32	41	37
Internet	19	19	19
Discounter	11	13	12

* Significant at the 5% level

** significant at the 1% level

and environmental friendliness as well as the traceability of the place of manufacture and the regional origin of the products—more strongly with small, intimate shops than with large department stores. This indicates that forest products are considered high-quality, exclusive products rather than mass-produced goods.

The respondents were grouped into buyers and non-buyers of non-wood forest products. Although it was generally more important to buyers than to non-buyers that forest products be offered at particular places, the corresponding difference between both groups is statistically significant only in the categories drugstore (χ^2 -test, $p < 0.05$), market stand ($p < 0.05$) and 'Heimatwerk'² ($p < 0.01$).

The analyses of the answers to the following questions are related to non-wood forest services which are consumed, or rather performed, by the respondents during their leisure time.

What activities do you do most while visiting the forest?

This question was asked to obtain an overview of preferred forest activities in order to assess the potential for NWFP&S matching these demands. The most frequent forest activities are summarised in Table 4. More than one choice was allowed. Recreation in general was by far the most frequently mentioned. Fitness activities including jogging and hiking, together with cycling, made up the second-largest group of activities. Gathering forest products (e.g., mushrooms and herbs) was the third most important group, cited by 23% of the respondents. Activities including attending cultural events in the forest, engaging in adventure (e.g., tree canopy climbing), horseback riding and educational activities (e.g., forest schools, using nature trails) together were cited by 18% of the respondents. Other activities—including animal watching, reading and singing were mentioned by 16%. Apart

² Heimatwerk is a chain of shops specialising in artisan products that are characterized by their 'Swissness' and are predominantly sold to tourists.

Table 4 Reported activities in the forest ($n = 897$)

Activity	Frequency of mentions, %
Recreation	87
Improving fitness by taking part in sport	34
Gathering of mushrooms and berries	23
Cycling	20
Adventure tours	6
Culture events	5
Horseback riding	3
Environmental education	4
Attending a forest school	1
Other activities	16

from recreation, physical exercise emerges as the most popular activity, comprising, fitness, cycling, adventure tours and horseback riding, it amounts to 63% of responses.

Are there any activities in the forest that you have always wanted to do but have not yet done? If so, what?

This open-ended question was asked to determine the potential of forest services by inquiring about activities for which there could be a demand. Responses are summarised in Table 5. Notably, only 26% of interviewees answered this question. Activities in the category ‘sports and games’ were most prominent, mentioned by 40 respondents. ‘Adventures in the forest’ (building temporary leaf and twig huts in trees, tree canopy climbing and visiting adventure trails), ‘camping or overnight stays in the forest’, and educational activities such as ‘get to know flora and fauna’ (e.g., guided forest visits, theme trails) were each mentioned 32 to 34 times. Another 28 entries were ‘romance and sex’, which speaks for itself. The category ‘forest and

Table 5 Activities that respondents want to do but have not yet done ($n = 232$)

Activity	Number of nominations
Sports and games	40
Get to know the flora and fauna	34
Camping and overnight stay in the forest	33
Adventure in the forest	32
Romance and sex	28
Forest and society	27
Gathering mushrooms and berries	20
Recreation, self-awareness	18

society'—both social activities such as barbecues and picnics in the forest and activities like cleaning up and helping to protect the forest—were also mentioned. Gathering mushrooms and berries, was the second least mentioned activity with 9% responses to this question.

Conclusions

The research results reported show that natural products from Swiss forests that are processed in Switzerland have a favourable reputation, great esteem among customers as well as market potential in the German-speaking as well as in the French-speaking part of Switzerland. However, marketing efforts and sales promotion—something well supported by the findings of other authors conducting research on NWFP&S (e.g., Borowski 1996; BUWAL 1997, 1998; Alfter 1998) could raise their share in urban consumption and thus increase the benefit of forest enterprises.

The responses in the market survey of urban consumers' demands suggest a proactive market strategy for forest products. High quality regional items such as honey, berries, mushrooms and chestnut products, appear to have a promising sales potential particularly if they are collected in an environmental friendly manner and certified and then sold by retailers in small shops and market stands. There is a considerable demand for non-wood forest services such as adventure, sports, camping and outdoor education which could be met by forest enterprises. Sports facilities and adventure trails, tree canopy climbing and camping at campsites with water supply and sanitary facilities were prominent among the responses as to what forest visitors' favourite activities would be. Promoting these activities by advertising the services through established tourism channels and increased information in the print and electronic media could attract more urban citizens.

The important question is who will take the lead in this effort? Large, medium and small forest enterprises may each have specific advantages in NWFP&S marketing efforts. The factor that most limits the competitiveness of forest enterprises trying to market NWFP&S is low profit margins, given the high wages in Switzerland from a forest enterprise's point of view (Herrmann et al. 2002). This explains to some extent the reluctance of Swiss forest enterprises to embark on marketing NWFP&S. Another reason is the lack of trained personnel and well-established marketing channels. Possible marketing strategies in this respect could be to link the marketing of non-wood products to the marketing of timber and other wood products and related services such as agro-tourism.

The barriers to entrepreneurship in general are that NWFP&S have a low market relevance compared with timber and are predominantly seasonal products, creating the problem of a constant market supply and employing qualified and dedicated personnel, who would have to be well paid and able to find other work in the off-season. The difficulties of entering into a relatively unknown and, at least in the take-off phase, economically uncertain market would deter forest owners from supplementing timber production by marketing NWFP&S. The main criteria in this process would be the marketing of the 'Swiss-ness' of the products and the

promotion of a high quality label that highlights their environmental friendliness and regional origin, as discussed by Hansmann et al. (2006) and Teisl (2003).

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